CURRICULUM VITAE

Dr. VijaylakshmiS.Jigajinni
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Personal Profile

Name   : **Vijaylakshmi B. Bembalgi**
Date of Birth : 02nd November 1980
Nationality   : Indian
Permanent   : C/o Prof. S. M. Jigajinni,
Address   Sri Guru, H. No. 9,
                      12th Cross,Vidyagiri
                      Bagalkote – 587 102, Karnataka, India

Qualifications

Qualification	College/ University	Year of passing	Percentage
S. S. L. C.	Karnataka Secondary Education Examination, Bangalore	1997	89.44
P. U. C.	Dept. of Pre University, Bangalore	1999	76.00
B. E.	Basaveshwar Engineering College, Bagalkote	2003	88.12
M. Tech.	Basaveshwar Engineering College, Bagalkote	2009	77.60
Ph.D	Research Center CSIR-NAL, Bangalore Affiliated to VTU, Belgaum	Oct 2019	--

Services

Sl. No.	Name and address of the Employer	Length of service	Designation of post held	Nature of work
1.	Basaveshwar Engineering College, Bagalkot	October 2003 to Oct 2010	Lecturer	◆ Teaching
2.	Basaveshwar Engineering College, Bagalkot	October 2010 to 2012	Sr. grade Lecturer	◆ Teaching
3.	Basaveshwar Engineering College, Bagalkot	Sept 2012 to Dec 2016 (in IT dept.)	Assist. Prof.	◆ Teaching

4.	Basaveshwar Engineering College, Bagalkot	Jan 2017 to Dec 2023	Assist. Prof. (AGP 7000)	◆ Teaching
5.	Basaveshwar Engineering College, Bagalkot	Jan 2024 to till date (ECE dept.)	Assist. Prof. (AGP 8000)	◆ Teaching

Professional Membership

1. **IEEE ID:92997861**
2. **Elevated to senior IEEE member 2021-22**
3. **Faculty advisor and Member of IEEE Robotics and Automation Society**
4. **VTU Faculty Id: 2BAEC0015035**
5. **Scopus ID:wIv2ZQ0AAAAJ&hl**
6. **Web of Science ID:AAH-9636-2021**
7. **ISOI Life member ID:1614**
8. **BMESI Life member ID: L777**
9. **SEA India during 2014-15 ID:7140111575**
10. **AICTE life member from 2019 ID:AICTSD/PROFESSOR/04437**
11. **Life member of Khadali MahilaVedike, Bagalkot**
12. **Life Member – Swadeshi Vijnan Andolan Karnataka**
13. **Donor Member – Karnataka Rajya Vijnan Parishad, Bangalore**
14. **Life member-Pragati Mahila Mandal, Bagalkot**
15. **Life member-Bharatiya Sikshna Mandal**

Paper Published

➢ **Book Chapter**
1. Vijaylakshmi S. Jigajinni (September 10th 2021) **"Health Monitoring of an Aircraft Fuel System Using Artificial Intelligence Techniques**" [Online First], IntechOpen, DOI: 10.5772/intechopen.99665. Available from: https://www.intechopen.com/online-first/78533.
2. Vijaylakshmi S. Jigajinni and Vanam Upendranath, **"ANFIS based fault diagnosis tool for a typical small aircraft fuel system,"** Chapter 45, Advances in Intelligent Systems and Computing Springer book series (AISC), Vol.479 Book ID: 393445, 2016, pp 708-745. SPR-ISBN:978-981-10-1708-7_45

➢ **National/International conference**

1. Vijaylakshmi S. Jigajinni, Suhas Hatti, Abhishek S, **"UV-C BASED PLATE STERILIZER**" Proc. International Conference on Sustainable Solutions in Engineering and Technology (SSET-2024), Bagalkote, India, 29 – 30 August 2024.
2. Vijaylakshmi Jigajinni and Vanam Upendranath, **"Health management of a typical small aircraft fuel system usingan adaptive technique",** in proc. of 25th IEEE Int. Conf. on High-Performance Computing, Data and Analytics to be held in Bangalore, India during December 17-20, 2018, pp 104-112.
3. Vijaylakshmi S. Jigajinni and Vanam Upendranath, **"Simulation and modeling of ANN-based prognosis tool for an aircraft fuel system health management",**Proc. Of 7th Int. Conf. of AI &

Soft Comp, Chennai, CS & IT-CSCP, July 14-15, 2018, pp 83-93.

4. Vijaylakshmi S. Jigajinni and Vanam Upendranath, **"ANFIS based fault diagnosis tool for a typical small aircraft fuel system,"** in the proceeding of International Conference on Intelligent Communication, Control and Devices, 2016.

5. Vijaylakshmi Jigajinni, **"Modelling of incipient fault detection and diagnosis in DC motor using simulink"** at ICCICN-14 organised by Dept. of Information Technology, RCC Institute of Information Tech., Kolkata, India during Nov 14-16 2014

6. S.M. Jigajinni and Vijaylakshmi Jigajinni**"Combined effect of electrical signal and accumulator in hydraulic cylinder"** at National conference FMNP-2013 organized by NIT, Hamirpur, H P, during 12th to 14th Dec 2013

7. Vijaylakshmi Jigajinni,**"Simulation of Visible Watermarking Algorithm for a Secured Digital Camera using Verilog HDL"** at National Conference CISCON-10 MIT Manipal on 8th Nov 2010.

➤ **National / International Journal**

1. Vijaylakshmi S. Jigajinni,**"Methods And Steps For Interfacing Labview With Arduino For Two Tank Water Tank Level Monitoring system"** at NOVYI Research Journal, Vol. 8, Issue 2, Page No: 358-368 Feb. 2023, DOI:16.10098. NMRJ.2022. V8I2.256342.3617.

2. Vijaylakshmi S. Jigajinni and Vanam Upendranath, **"Comparison of ANFIS and ANN techniques in the simulation of a typical aircraft fuel system health management",** Int. J of Artificial Intelligence and Applications (IJAIA), Vol. 9(4), Nov. 2018, pp 41-53. ISSN NO.**0976 – 2191,** SSRN ID:3280193

3. **"Simulation of Incipient Fault Detection, Confirmation and Diagnosis Using Kalman Filter"** published in International Journal of Science and Research (IJSR), vol.3, issue 8,ISSN (Online): 2319-7064,Impact Factor (2012): 3.358

Conference Organized:
- Represented as Conference chair, Organized and Hosted IEEE International Conference **NKCon-2024** with Theme "Digital Transformation: Unleashing the power of Information" in association with IEEE NKSS and IEEE Bangalore section during 21 and 22 Sept. 2024 at Basaveshwar Engineering College. www.nkcon2024.org
- Organising Committee member of IEEE Bangalore section SIGHT flag ship conference BHTC-2025 organised at GIT Belagavi held during April 25th to 26th 2025.

Awards:

- Under IEEE NKSS received **"Outstanding Student Branch Counselor Award 2024"** (35261) at NKSS AGM held on Jan 4th 2025 for the year 2024 with cash prize of Rs. 5000.00
- Under IEEE RAS Bangalore chapter **"Outstanding Upcoming RAS student Branch Chapter 2023"** **(SBC35261B)** for the year 2023 with cash prize of Rs. 5000.00 (Faculty Advisor)
- Under IEEE NKSS **"Outstanding IEEE Student Branch"** (35261) for the year 2023 with cash prize of Rs. 5000.00 (NKSS Jt. Secretary)

- Under IEEE WIE Bangalore section received **"Outstanding IEEE Student Branch"** (35261) for the year 2023 and received cash prize of Rs. 2000.00
- Under IEEE North Karnataka Sub Section (NKSS) received **"Outstanding IEEE Student Branch"** (35261) for the year 2021 (Branch Counselor)
- Received **"Best Faculty Award"** by INSO for the year 2022 by INSO awards organized by VDGOOD professional committee.

Professional Service:

- Execom member of IEEE Council of network Affinity group (CNAG) Bangalore section for the Year 2025.
- *Organising Chair and Reviewer* IEEE International Conference IEEE NKSS flagship international conference NKCON 2024 organized by Basaveshwar Engineering College, Bagalkote held during 20th 21st & 22nd Sept. 2024
- IEEE Xtreme Programming competition protoc for the year-2022,2023,2024
- Project proposal reviewer for Engineering Projects in Community Services EPICs in IEEE for the year 203-2024 (certificate dt. 19/6/2024)
- Member: For MoU between BEC Bagalkote and Saaketh Electro circuit Pvt. Ltd, Pune Maharastra on 14th June 2024
- Member: For MoU between BEC Bagalkote and AG Electric Motors Karad Maharastra on 13th June 2024
- Convenor: For MoU between BEC Bagalkote and Space Zee Technolgies Chennai Tamil Nadu Pvt. Ltd on 11th May 2024
- Convenor: For MoU between BEC Bagalkote and VI Solutions, Bengaluru Pvt. Ltd Karnataka on 15th March 2024.
- Part of MoU signing ceremony as a point of contact between IEEE NKSS and BEC Bagalkot on 20th Jan 2024.
- Contributed in Young professional student industry connect YPSIC 2023 as volunteer and received certificate of appreciation for remarkable contribution.
- BEC-IEEE Branch Counsellor 2024, WIE BEC IEEE faculty coordinator
- IEEE NKSS Jt. Sec 2023, Vice Chair 2024, Execom member 2025
- Publicity Chair for IEEE NKSS flagship international conference NKCON 2023 held during 19th & 20th Nov. 2023 hosted by KLE College Belagavi in association with IEEE NKSS
- *Reviewer* IEEE International Conference IEEE NKSS flagship international conference NKCON 2023 organized by KLE dr. M. S. Sheshagiri College of Engineering, Belagavi held during 19th & 20th Nov. 2023
- Part of Bangalore section BC meet held at MSRIT on 13th & 14th June 2023.
- Attended an EXECOM meet at Jain Engineering College, Belagavi on 29th April 2023
- *Judge* State Level IEEE project exhibition at RYMEC Bellary 17th June 2022
- *Reviewer* Journal "Applied Soft Computing" Elsevier April 2022
- *Reviewer* IEEE International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE-2022) organized by Ballari Institute of Technology and Management on 23rd- 24th April 2022
- *Reviewer* IEEE Mysore CON 2022 flagship International conference organized by NITTTE Bengaluru on 16th and 17th Oct 2022
- *Reviewer* IEEE International Conference on Mobile Networks and Wireless Communications

ICMNWC-2021
- *Reviewer* International Conference on Machine Learning and Intelligent Systems MLIS-2019 on 19th–22nd 2019

Grants and Funds received:

1. VTU-VGST sanctioned Rs. 2 Lakhs for organization of an FDP on **"Intelligent Instrumentation and Robotics",** from 26-30th March 2012 for Engineering College teachers by Dept. of Instrumentation Technology in the Basaveshwar Engineering College Bagalkot.
2. Received an amount of Rs. 3000.00 from KSCST Govt. of Karnataka for the student project on **"Health Monitoring System for Diabetic Patients"** using python of students Ashmini, Brunda, Deepa and Lavanya team during 2021-2022.
3. Received an amount of Rs. 7000.00 from KSCST Govt. of Karnataka for the student project on **"Solar Operated Plastic E-Recycling Bin"** of students Shreevatsa, Sangmesh, Suhas and Malatesh team during 2022-2023.
4. Won Second prize at Inter department Project Idea presentation hosted by BEC-Idea Lab during Aug. 2023 and received cash prize of Rs. 2000.00 from BEC, Bagalkote for the project on **"Solar Operated Plastic E-Recycling Bin"** of students Shriharsha and team.
5. Under IEEE Robotics and automation society received a grant of Rs. 41,275.00 for organizing workshops and training program as faculty advisor for the year 2022.

FDP/SDF/Workshop Conducted

1. Organized three days teachers training program on **"Effective Teaching practices"** for young teachers during 28th to 30th January 2010 in Basaveswar Engg College, Bagalkot.
2. Organized Short Term Training Programme sponsored by TEQIP World Bank on **"SCADA and PLCs in Industrial Automation"**. from 23-25th December 2006 (Three Days) for Engineering College teachers by dept of instrumentation technology in the Basaveshwar Engineering College Bagalkot.
3. Organized three days teachers training program on **"Effective Teaching practices"** for young teachers during 3rd to 5th March 2012 in Basaveswar Engg College, Bagalkot.
4. Organized five days Short Term Training Programme sponsored by VTU-VGST (Rs. 2 Lakhs) on **"Intelligent Instrumentation and Robotics",** from 26-30th March 2012 for Engineering College teachers by Dept. of Instrumentation Technology in the Basaveshwar Engineering College Bagalkot.
5. Organized under TEQIP Phase-II sponsored 3 days Student Development Programme (SDP) on **"Soft Skills Development Programme"**from 8th to 10th Oct 2013 by dept. of Instrumentation Technology in Basaveshwar Engg. College, Bagalkot
6. Organized 3 days Student Development Programme (SDP) under ACME on **"Labview and its Application"** from 1stto 3rd March 2019 by Dept. of Electronics and Communication Engg. in BasaveshwarEngg. College, Bagalkot
7. Organized 3 days Student Development Programme (SDP) on **"Modeling, Simulation and Implementation using Matlab/Simulink" sponsored by TEQIP-III during** 3rd to 5th October 2019 Basaveshwar Engg. College, Bagalkot for final year students of ECE .
8. Organized one day workshop on **"Modern software development skills using open source"** Equity action plan (EAP) TEQIP phase -III on 16th January 2021 by Mr. Veeresh Katageri Software Developer ECS, Germany for faculty, UG/PG final year students both in online and offline mode.

9. Coordinated a Webinar on **"Role of faculty in implementation of NEP"** jointly organized by Basaveshwar Engineering College(A) with Bharatiya Sikshan Mandal (BSM) and NITI Aayog on 20th Feb, 2021.

10. Organized one day workshop on **"Virtual tour to VLSI Industry"** under ACME department association on 16th June 2021 by Mrs. Pooja Melinmani Intel India Pvt. Ltd., UG/PG final year students.

11. Organized two-week National level FDP on **"Latex and Moodle Learning Management System"** during 19th July to 30 July 2021 in association with IIT Bombay Spoken Tutorial.

12. Under IEEE NKSS in association with ACME ECE department organized "**Computer awareness program for Anatha sharam Children's of Ashrayadhama Bagalkote**" on 11th Feb. 2023

13. Under BEC-IIC organized a talk **on "My story-motivational session by successful entrepreneur"** by Mr. Mahesh Bellad, Founder & CFO, Online Instruments India Pvt. Ltd. Bengaluru on 15th Feb. 2023

14. Under BEC-IIC organized a self driven talk on **"A big step from Engineer to an Entrepreneur"** by Mr. Amit Vernekar, CEO Biosyll Tech, Hubbali on 4th August 2023 in association with ACME.

15. Coordinated and organized 3 days Student Development Programme (SDP) under BEC-Idea Lab in association with ACME on **"IoT using Labview"** from 14th to 16th Sept. 2023 jointly by VI solutions and Dept. of Electronics and Communication Engg. in Basaveshwar Engg. College, Bagalkote

16. Coordinated and organized 3 days Workshop under BEC-IEEE in association with Robotics and Automation Society on **"Robotics"** from 5th to 7th Oct. 2023 jointly by by Space ZEE technologies Chennai at Basaveshwar Engg. College, Bagalkote

17. Coordinated and organized 5 days Hands on SDP under BEC-IEEE and ACME in association with BEC Idea Lab on **"IoT for Agricultural and Domestic Applications"** from 23rd to 27th Jan. 2024 jointly by Space ZEE technologies Chennai at Basaveshwar Engg. College, Bagalkote

18. Coordinated and organized 3 days Hands on Student Development Program on **"Mastering LabVIEW: Applications and Insights"** from 13th to 15th Feb. 2025 in association with MoU Partner VI Solutions, Bengaluru Pvt. Ltd. at Basaveshwar Engineering College, Bagalkote

Webinar/ Expert talk/Session Organized

1. "What you believe you can achieve" was organized on 26th Sept. 2020 by Dr. R.G. Allagi under Personality Development Cell of ECE department for the students.

2. "Aspire to IAS" was organized by BEC-IEEE on 26th Jan.2021 by Mr. Rajashekhar Kalayankar Govt. of India, coordinated as IEEE student branch counsellor.

3. "Career aspects of full stack developer" was organized by BEC-IEEE on 27th Feb.2021 by Mr. Pavan Wadawadagi, Senior Engineer III, Full stack developer, Vocera Communications, coordinated as IEEE student branch counsellor.

4. Hosted and compeered IEEE North Karnataka Sub-Section AGM on 16th Jan 2022.

5. Under BEC-IIC organized a webinar on "Business strategic plan- for future entrepreneur" by Mr. Mahantesh Sabarad, Senior Finance consultant, Mumbai on 25th Feb. 2023

6. Compeered the Inaugural session of National Symposia held on 8th & 9th Sept. 2023 on the eve of diamond jubilee celebration

7. Moderated an industry panel discussion under NOVUS 2023 held on 15/12/2023 with three panelists from industry.

8. Under BEC-IIC 6.0 organized a webinar on "Idea to product: how to penetrate the market" by Mr. Hariharan, Founder CEO Space Zee Tech. Chennai on 5th Jan. 2024

9. Organized a talk by Mr. Sunil Kambe CEO, VI Solutions, Bengaluru on "Carrier Opportunities for ECE students in LabVIEW" on 15th March 2024 under ACME.

10. Under BEC-IIC 6.0 in association with ACME organized a talk on "Start-Up 101 Steps" by Mr. Hariharan, Founder CEO Space Zee Tech. Chennai on 11th May 2024

Invited Lectures/Seminars/talks:

❖ Delivered a guest lecturer on **"Nano-Electronics"** organized by Basaveshwar PU science College, Bagalkot on 17.09.2018

❖ Delivered a technical talk on **"Sensors-interfacing to real world"** organized by Basaveshwar International Public School (BIPS) at Atal Tinkering lab, Bagalkot on 11.01.2019

❖ Presented a webinar on **"E-waste Management"** on 18th Oct. 2020 for the awareness on electronics waste management for the Inner-wheel Club members of Bagalkot district.

❖ Session on **"Creative Practices"** for ECE dept students in the Induction program for first years (Online) on 16th Dec 2020, at BEC, Bagalkot

❖ Session on **"Harmony in self and body"** in the Induction program for first year students (Offline) on 3rd and 4th Feb. 2021, BEC, Bagalkot.

❖ Webinar on **"Effective resume writing"** for final and pre-final year students under BEC-IEEE student chapter was delivered on 16th April 2021 during lockdown.

❖ A session on **"E-waste Management"** on 28th Feb. 2022 for the awareness on electronics waste management on the world's science day celebration under BEC-IIC in association with ACME.

❖ Delivered a talk on **"Women in Technology"** at BVVS Akanabalaga on 5th April 2023 as guest of 60th year celebration of their society.

❖ Session on **"An awareness about IEEE- Robotics and Automation (RAS)"** in robotics workshop organized by Idea Lab on 5th Aug.2023 at Placement computer lab.

❖ Session on **"An awareness on professional society membership"** in the Student Induction program for first year students on 21st Sept. 2023, Gallery hall BEC, Bagalkot.

❖ Hosted a session on **"Awareness on basic life support system"** by Dr. Raghvendra Vanaki. SNMC & HSK Medical College Bagalkot in the Student Induction program for first year students on 21st Sept. 2023, Gallery hall BEC, Bagalkot

❖ Session on **"Harmony in Society and Nature"** in the student induction program for first year students for academic batch 2023-24 on 22nd Sept. 2023,dept. of ECE, BEC, Bagalkot.

❖ Session on **"Creative Activities"** in the student induction program for first year students for academic batch 2024-25 on 11th March. 2024,dept. of ECE, BEC, Bagalkot.

- ❖ Delivered a technical talk on **"Integrated Vehicle Health Management (IVHM) known facts"** under BEC-IEEE expert tech talk series on 18th Jan. 2024 in ECE dept. Basaveshwar Engineering College, Bagalkote
- ❖ As resources person delivered a talk on **"Elements and components of Embedded system with communication interface"** at 5-days FDP on Embedded system design using ARM cortex on 4th Feb. 2025 at Dayanand Sagar University Harohalli Bengaluru
- ❖ As Chief guest delivered a talk on **"IEEE Benefits for Engineering Colleges"** at SECAB engineering College Vijayapur on 27th Jan. 2025

Short Term Training Programmes Attended

Sl. No.	Course title	Institute	No. of weeks	Duration
1.	Induction Programme for Young Teachers	BasaveshwarEngineeringCollege, Bagalkot	Two Weeks	19-31 Jan. 2004
2.	Embedded Systems and Applications	BasaveshwarEngineeringCollege, Bagalkot	One Week	22-27 Mar. 2004
3.	Advanced Electronics Laboratories (on VHDL, DSP and Microcontrollers)	R. N. S. Institute of Technology, Bangalore	One Week	14-19 Feb. 2005
4.	Instructional Design and Delivery	BasaveshwarEngineeringCollege, Bagalkot	One Week	08-13 Aug. 2005
5.	Applied Mathematics	BasaveshwarEngineeringCollege, Bagalkot	One Week	03-08 Apr. 2006
6.	Digital Signal Processor and its Applications	BasaveshwarEngineeringCollege, Bagalkot	One Week	25-30 Sept. 2006
7.	Signal Processing and its Applications	BasaveshwarEngineeringCollege, Bagalkot	Three Days	09-11 Oct. 2006
8.	SCADA and PLCs for Industrial Automation	BasaveshwarEngineeringCollege, Bagalkot	Three Days	21-23 Dec. 2006
8.	Embedded Systems	BasaveshwarEngineeringCollege, Bagalkot	One Week	05-10 Feb. 2007
9.	Real Time Operating Systems (A case study on Vxworks)	BasaveshwarEngineeringCollege, Bagalkot	One Week	26-31 Mar. 2007
10.	Computer Network Simulation	BasaveshwarEngineeringCollege, Bagalkot	Three Days	21-23 Feb. 2008
11.	VLSI Design	Global EducationCenter of Infosys Technologies, Mysore	Five Days	07-11 July 2008
12.	High impact Teaching skills	Mission 10x, wipro at Bagalkot	Two Days	02-03 Aug. 2010
13.	Soft computing approaches to image processing and pattern recognition	Dept. of Comupter science, BEC Bagalkot	Five Days	20th -24th march 2010
14.	Teaching Engg. Using Matlab& Simulink	R.V.College of Eng.Bangalore	Three Days	12th -14th July 2011
15.	Technical Documentation Using Latex	Dept. of E&C, BEC,	Three Days	27th -29th May

				2013
16.	Soft and Evolutionary computing Techniques and its Applications	Dept. of E&C, BEC, Bagalkot	Three Days	30,31st -1st June 2013
17.	Advances in Signal Processing and Pattern Recognition	M S Ramaiah Institute of Technology, Bangalore	Five Days	29th – 3rd August 2013
18.	Workshop on: 'Research Methodologies & Latex'	Ghousia, College of Engg., Ramanagar, Bengaluru	Three Days	27th to 29th July 2013
19.	Research avenues in the information technology	BEC, Bagalkot	Five Days	3rd to 7thJune 2019
20.	Machine Learning, Deep learning and computational Intelligence for wireless communication	Dept. of Electronics and Communication Engg., NIT, Trichy	Five Days	16th to 20th Sept 2019
21.	TEQIP online certification on "Digital transformation in teaching learning process"	SWAYAM course offered by IIT Bombay	Two weeks	Feb 16th to March 6th 2020
22.	"Effective Engineering Teaching Practices"	NPTEL course offered by IITR Madras	Four weeks	Jan 27thto Feb 21st2020
23.	"FDP on Universal Human Values for DEEKSHARAMBH (Student Induction Program)"	NIT Patna	Five Days online	Sept. 21stto 25th 2020
24.	"Artificial Intelligence"	AICTE Training and Learning (ATAL) Academy at CSIR-Advanced Materials and Processes research Institute, Bhopal	Five Days	Nov. 16th to 20th 2020
25.	"Control system and sensor technology" from	AICTE Training and Learning (ATAL) Academy organized by MIT, Manipal	Five Days	Jan. 19th to 23rd 2021
26.	"Artificial Intelligence using Matlab"	CoreEL technologies	Three Days (Online)	Feb. 23rd to 25th 2021
27.	"Fuzzy logic and Neural Networks"	NPTEL course offered by IIT Kharagpur	Eight weeks	15th Feb. 2021 to 25th April 2021
28.	"Applications of Artificial Intelligence in research and Development" AICTE-ATAL	CSIR Bhopal	Five Days	22nd Nov. to 26th Nov 2021
29.	IIOT using LabVIEW	KLE, Dr. M. S. Sheshgiri College of Engineering	Five Days	3rd Jan to 9th Jan 2022

		and Technology, Belagavi, Karnataka.		
30.	International FDP on Innovations in Engineering Design and Management	Dept. of Mechanical Engg., Alliance College of Engineering and Design, Alliance University Bengaluru	Five Days	20th Feb. to 25th Feb. 2023
31.	AICTE-VTU Joint Teachers Training Program (Online) Electronics Circuit Design using LabVIEW	VTU, Center for PG Muddenahalli, Bengaluru	Five Days	12th to 16th June 2023
32.	LabVIEW and data Acquisition System	KIIT, Deemed to be University, Bhubaneshwar, Odisha	Three Days	26th to 28th Aug 2023
33.	FDP on "Empowering Research: Exploring funding opportunities"	BEC Bagalkote	2 days	17th to 18th Jan. 2025
34.	One week FDP on "AI-ML Based Smart Grid"	BEC Bagalkote	5 days	30th Jan to 3rd Feb. 2025

Seminar/Workshops Attended

1. Three-days workshop on "VLSI Design Labs" from 7-9 Aug. 2004 organized by Bangalore Institute of Technology, Bangalore.
2. National Seminar on "Intelligent Instrumentation for Biological Science" from 26-27 Nov. 2004 organized by B. V. Bhoomaraddi College of Engineering and Technology, Hubli.
3. A special Lecture series on "Mathematical Modeling for Digital Image Processing" from 9-14 Jan. 2006 organized by BasaveshwarEngineeringCollege, Bagalkot.
4. Three-days workshop on "Medical Applications of Signal and Image processing, *MASIP' 06*" " from 23-25 Jan. 2006 organized by Manipal Institute of Technology, Manipal.
5. One day workshop on "Counseling Techniques" on 25th Aug. 2006 organized by BasaveshwarEngineeringCollege, Bagalkot.
6. Two-days National seminar on "Modern sensors & their applications" from 17-18 Nov. 2006 organized by BasaveshwarEngineeringCollege, Bagalkot.
7. Three-days workshop on "Real Time operating system-Vx Works" from 28-30 Mar. 2007 organized by BasaveshwarEngineeringCollege, Bagalkot.
8. Three- days workshop on "Matlab and 10rganize" from 12-14 July 2011 organized by IUCEE at RV Engg college Bangalore.
9. Three- days workshop on "IVHM" from 9th – 11th Jan 2012 organized by Indo-US collaboration and NAL, Bangalore at Oberoi Hotel Bangalore.

10. One day seminar on 'Matlab& Simulink' for Engineering Education on 20th June 2013 at Hubli.

11. Three days National level workshop on 'Implementation of signal processing Algorithms using FPGAs' from 23rd -25th May 2013.

12. Workshop on: 'Advanced signal processing and pattern Recognition' at M.S. Ramaiah, College of Engg. Banglore during 29th Sept. to 3rd Aug. 2013

13. Three days seminar on "Technical Documentation using Latex" at BEC, Bagalkot during 27th to 29th May 2013.

14. Workshop on: 'Soft and evolutionary computing techniques and its applications' at BEC, Bagalkot during 30th May to 1stJune 2013.

15. Workshop on: 'Modern Aspects of Intellectual Solutions on Publications, patents and Personal management' at BEC, Bagalkot on 7th Dec. 2013.

16. On day workshop on: 'Sustainable Innovation an End to End Approach' at BEC, Bagalkot during 29th to 30th Jan. 2014.

17. One day seminar on "Control system design using Simulink" on 13th Feb 2014 at Park Plaza, Bengaluru.

18. Two days workshop on "ANN, Fuzzy logic and ANFIS for pattern recognition " on Oct 3rd and 4th 2015 at Dhe leadership center Bangalore, organized by SCS-India.

19. Workshop on "Outcome Based Education" organized under TEQIP-II on 18th Dec 2015 at Basaveshwar Engg. College, Bagalkot.

20. Workshop on "Research Methodologies" organized under TEQIP-II on 19th Dec 2015 at Basaveshwar Engg. College, Bagalkot.

21. Indo-Us Workshop on "Essential Algorithms for Integrated Vehicle Health Management for Aerospace Applications" held during 23-26 May 2016 at Indian Institute of Science, Benaglore.

22. One day NPTEL workshop on "Awareness of NPTEL courses" on 29th Nov 2019 at BEC, jointly organized by IIT Madras and BEC, Bagalkot.

23. One day workshop on "Publishing Research paper in high quality journals" on 19th Dec 2019 organized by dept. of Management studies, BEC, Bagalkot.

24. Two days' E-workshop on "AICTE- examination reform policy" first virtual workshop organized by BEC, Bagalkot on 29th and 30th April 2020.

25. Participated in India's first Artificial Intelligence virtual fest 2020 on 2nd and 3rd May 2020

26. Two week FDP on "R Language" organized by Cambridge Institute of technology Bengaluru in collaboration with IIT Bombay spoken tutorial during 22/06/2020 to 5/07/2020.

27. One Week Online Faculty Development Programme on "Concepts, Methods, Challenges and Future directions in Medical image analysis using Machine learning", Organized by the Department of Electronics and Instrumentation, SJCE , JSS S&TU, Mysuru, from 10th to 14th August 2020, under TEQIP Phase III.

28. Two days workshop on "Embedded system architecture and ARM-Hands on" organized by School of Electrical Engg, VIT, Vellore from 29th July to 30th July 2022.

29. Two days workshop on "Outcome Based Education" conducted by Dr. Sharad Pradan Director organized by BEC, Bagalkote during 30th Sept. to 1st Oct. 2023.

30. One day workshop on "IEEE-Catalyst: Re-fueling Mid Career" organized by IEEE Bangalore section on 13th Oct. 2023 at The Chancery Pavilion Bangalore.
31. Attended 4 days 3rd Annual IEEE STEM Summit 2023 organized by IEEE try engineering during 24th Oct to 27th Oct. 2023 in virtual mode.
32. Attended three days workshop on "Strategic Planning for Basaveshwar Engineering College" organized by BEC Bagalkote from 23rd to 25th Jan 2024.
33. Participated in 20 hrs training on elementary data analytics communication skill building and job readiness for "women in data" program during AY 2023-24 supported by Dell technologies and implemented by I-STEM Learning Links Foundation.
34. Attended two days workshops on 'Teaching, Assessment learning for Engineering Education' at TALE-2024 conference held at MIT Bengaluru in association with IEEE Education society during 10th & 11th Dec.2024
35. Attended 3 hrs online workshop on "Python using AI" organized by AI for techies on 30th March 2025.

Industry Internship

1. Attended online Industrial Internship on "Industries IOT-(IIOT), Machine learning and Deep Learning using LabVIEW" during May and June 2020 organized by VI solutions Bengaluru

Webinar Attended

1. Participated in National webinar on "Best preparation and Practices for improving NIRF in Higher Education" organized by Rashihood University Sonipat on 29th Jan. 2024
2. On "AI and Data science" organized by IEEE circuits and systems (CAS) society Bangalore chapter in association with IEEE Bangalore section on 30th May 2020.
3. On "" IEEE webinar series by women leaders" organized by WIE-IEEE Bangalore section during 25th to 29th May 2020.
4. On "Machine learning, digital twins and self-organized methods" organized by Cambridge Institute of Technology Bengaluru on 29th May2020.
5. On 'Innovation in Antenna Design Analysis' organized by Altair India on 8/07/2020.
6. IEEE CAS regional activity and how to run CAS chapter organized by IEEE CAS with IEEE Bengaluru section on 12/09/2020.
7. Cancer in female: Screening, Awareness and Prevention organized by CIT Bengaluru under the aegis of IQAC on 17/06/2020.
8. E-workshop on 'Sexual Harassment at workplace' organized by MBA dept. of BEC under EAP-TEQIP phase-III on 27/06/2020.
9. On 'Architecting Digital transformation Journey' organized by Vijay Vittal Institute of Technology Bengaluru on 24/07/2020.

Subjects Taught to UG Students of Instrumentation Technology

➢ Digital Image Processing
➢ Computer Organization
➢ Control System
➢ Advanced Control Systems

- ➢ Instrument Transducer
- ➢ Aircraft Instrumentation
- ➢ Business communication and technical writing

Subjects Taught to UG Students of Electronics and Communication Engg.

- ➢ Information Theory and Coding
- ➢ Signals and Systems
- ➢ Basic Electronics
- ➢ Computer Organization
- ➢ Digital Communication
- ➢ Industrial Automation
- ➢ Image Processing
- ➢ Aircraft Electronics and Systems
- ➢ Scientific Foundation for Health

Subjects Taught to PG Students of Digital Communication

- ➢ Advanced Computer Networks

Laboratories Handled
- ➢ Instrumentation Lab
- ➢ Digital Lab
- ➢ Power Electronics Lab
- ➢ Measurement Lab
- ➢ DSP Lab
- ➢ Advanced Processor (Intel) Lab
- ➢ Analog Communication Lab
- ➢ Modeling and Simulation Lab
- ➢ Computer Network Lab
- ➢ Analog Circuit Design Lab
- ➢ Electronics Principle lab

Completed Projects (Under Graduate)

1. Vedic Multiplier Implementation using VLSI   -2003-04
2. Multiplier Algorithm using VLSI   -2004-05
3. Alcohol Detector   -2004-05
4. Digital image watermarking using DWT   -2009-10
5. Digital image watermarking using DCT   -2010-11
6. Finger print recognition using Matlab   -2010-11

7. GSM based Dam monitoring system   -2011-12
8. Simulation of DC Motor using Matlab& Simulink -2012-2013
9. Modeling of Fault detection and diagnosis of DC motor using Simulink-2013-14
10. Design and Development of Intelligent Street: Power Generation And Power Conservation-2014-15
11. Biometric based automatic ration dispensing unit:2015-16
12. Zigbee Based Wireless Data Acquisition Using LabVIEW for Implementing Smart Driving Skill Evaluation System: 2019-2020
13. Fault detection of two tank water level monitoring system using Labview interfacing with Arduino: 2020-2021
14. Health monitoring system for diabetic patients using Python:2021-2022
15. Portable Ventilator: 2021-2022
16. UV-C based plate sterilizer: 2022-23
17. Solar Operated plastic E-dustbin:2022-23
18. Automatic plate scrubbing unit: 2022-23
19. Design of Altitude Measuring Drone:2023-2024
20. Soldier health Monitoring system: 2024-2025
21. Low cost Edible oil testing Unit: 2024-2025

Technical Skills

- C and C++ Programming
- MATLAB/ Simulink
- Microprocessor /Microcontroller
- VERILOG HDL
- LabVIEW
- R-language
- Scilab
- PLC simulator

Other Activities

- **Master of ceremony of many college level functions**
- **Member** of various organizing committees for several STTPs conducted by the college.
- **Member** of organizing committee for college gymkhana activities.
- **Coordinator** of Instrumentation Technology Students Association (ITSA) during the year 2005-2006 and 2014-15.
- **Co-coordinator** of TEQIP World Bank Assistance STTP sponsored Short Term Training Programme. organized in the Basaveshwar Engineering College Bagalkot from 23-25th December 2006 (Three Days) on **"SCADA and PLCs in Industrial Automation"** for Engineering College teachers.

- ➢ **Judge** for **"I-TECH 08"** of Instrumentation Technology Students Association (ITSA) on 27 April 2008.
- ➢ **Coordinated and Judged** for **"I-TECH 10"** of Instrumentation Technology Students Association (ITSA) on 27 April 2008
- ➢ **Judge** for **"I-TECH 011"** of Instrumentation Technology Students Association (ITSA) on 11th April 2011.
- ➢ Part of programming committee and anchored in the **first graduation 20th Feb 2010**
- ➢ Co-ordinated VTU-VGST funded 5 days FDP on "Intelligent Instrumentation and Robotics"at Basaveshwar Engg. College, Bagalkot.
- ➢ Part of HRD program as facilitator continuously for 12 years organized by the college.
- ➢ Co-Ordinator of three days workshop on Labview and its application organized by Dept. of Electronics and communication Engg. (ACME) student's association, BEC, Bagalkot.
- ➢ **Co-coordinator** of TEQIP-3 sponsored five days SDP on "Modeling, simulation and implementation using Matlab/Simulink" organized at Basaveshwar Engineering College Bagalkot, during 3rd Oct to 5th Oct 2019 for pre-final year and final year students of BEC.
- ➢ Hosted AGM of IEEE NKSS on 7th March 2023 and on 16th Jan. 2022
- ➢ **Co-Ordinator of Personality Development Club** of the department for year 20-21
- ➢ **Department NAAC** coordinator 2021-22
- ➢ **IEEE Branch Counsellor 2021, 2024 student Chapter – 35261**
- ➢ **College Gymkhana Cultural Coordinator 2021-22, 2022-23**
- ➢ **IEEE NKSS Execom member as Joint Secretary 2023**
- ➢ **IEEE NKSS Vice Chair-2024**
- ➢ **IEEE NKSS and BEC IEEE WIE Chair**
- ➢ **Department NBA coordinator 2024-2025**
- ➢ **BEC IIT Bombay Spoken tutorial Coordinator 2023, 2025**

Ph.D Information

Thesis: "**Simulation and Modelling of Faults and Predicting the Functional Behaviour of A Typical Aircraft Fuel System**"

Period of Research: August 2011to December 2018

Year of Award:14th Oct. 2019

Institute of Research: Dept. of EEE, BEC Bagalkot and CSIR-NAL, Bengaluru

Guide:Dr. D.S. Jangamshetti, SIEEE, Prof., EEE, BEC, Bagalkot

Co-guide:Dr. VanamUperndranath, SIEEE. Senior Principal Scientist, CSIR-NAL, Bengaluru

Summary:The research work involves modeling, simulation and implementation of fault diagnosis and prognosis of a typical small aircraft fuel system health management. Developed a health management process that includes system status monitoring, diagnosing the faults or failures in the sub-system or components of the system, predicting the impact of faults and taking corrective measures for the proper operation of system. A hybrid architecture is designed for the health management process of an aircraft fuel system through integration of model-based and Artificial Intelligence (AI) based soft computing techniques. Following are the contributions of the research work: (I) Modeling and simulation of a typical small aircraft fuel system using Matlab/Simulink (2) Study and investigation of faults and their effects on aircraft fuel system (3) Developing a health management process of an aircraft fuel system using ANN and ANFIS (4) Developing

an adaptive technique and comparison of its effectiveness with ANN and ANFIS controller for predicting the functional behavior of a typical fuel system.

The contributions are briefed as follows:

Contribution 1: Simulation of typical aircraft fuel system

The assumed typical small aircraft fuel system consists of two engines, four fuel tanks and eight pumps for fetching fuel from both left-wing and right-wing fuel tanks. The fuel system modelled has a total fuel capacity of 2800 kg with each tank capacity of 700 kg. The tanks are symmetrically located in both left and right wings. The total usable capacity of fuel is adequate for 30 minutes of operation of aircraft at full continuous power.The model of the fuel system is simulated using Matlab/Simulink in the laboratory environment. The fuel line is built and simulated similar to the practical fuel system.

Contribution 2: Study and investigation of fault and their effects

A complete study of the types of faults, effects and severity of the faults of the aircraft fuel system are carried out. In the simulation work, the faults are introduced intentionally in the first tank by decreasing the fuel level which may occur due to leakage in the tanks, pipelines, valve stuck, filter blocks or icing within the fuel system. Four stages of failure conditions and their severity are presented. The catastrophic events lead to the complete damage of the system with great influence on the operation, safety and performance of the aircraft. The faults related to these severe events are emphasised in the present work.

Contribution 3: Developing health management process for an aircraft fuel system using ANN and ANFIS

The architecture framework comprises three main functions; monitoring, diagnosis and prognosis. The health management process includes monitoring of the fuel flow rate and status of its co-operating components like pumps, the level of fuel in each tank, valve functioning, along with the rate of fuel consumption by the engine. Based on the initial fuel flow rate, the rate of fuel consumed by the engine is provided by the monitoring function. Further, the required fuel flow rate from each tank is calculated by the prediction model. Based on the available fuel quantity, engine fuel consumption and status of the components, the prognosis function generates the control signals to the fuel management system to predict and mitigate the faults within the system.

Contribution 4: Health Management of fuel system using Adaptive Technique and its comparison using ANN and ANFIS

ANFIS health management methodology provides improved learning and adaption capability for the non-linear operating conditions better than ANN. The adaptive technique is an integrated fuzzy logic system with SVM. This is implemented to identify, detectand mitigate faults occurred in the fuel system. Fuzzy learning andSVM classifier areintegratedinto this adaptivetechnique to forecast and to manage the required flow rate.The performance of this hybrid adaptive technique is compared with the existing controller, ANN and ANFIS respectively. The total fuel requirement of 2800 kg is fulfilled by four fuel tanks, with each tank capacity of 700 kg. Deployment of adaptive technique provides a total mass of 2750 kg of fuel which is nearest to the required amount of fuel by the engine. It is the SVM forecasting process that achieves better fuel flow rate.

Further, I hereby declare that all the information provided by me is true to the best of my knowledge and belief.

Dr. Vijaylakshmi Jigajinni